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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,855	03/22/2006	Munekatsu Shimada	072280-0013	9266

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EXAMINER	
KIM, JOHN K	

ART UNIT	PAPER NUMBER
2834	

MAIL DATE	DELIVERY MODE
06/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/572,855	SHIMADA ET AL.	
	Examiner	Art Unit	
	JOHN K. KIM	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) *6-35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

RCE

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/29/2009 has been entered.

Remarks

2. In view of amendments, the Examiner withdraws the rejection under 35 USC 102(b) and the rejection under 35 USC 103(a) to claims 1-5. However, claims 1-5 are not in a condition for allowance in view of new ground of rejection. The applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

3. The claim 1 has been amended. In view of amendment, the examiner reviewed amended claims and remarks as follows.

4. Records of the restriction requirement can be found in the office actions mailed on 6/9/2008, 8/29/2008 and 1/30/2009.

5. The reasons for the restriction requirement are further clarified below.

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

- Group 1, claim(s) 1-5 drawn to apparatus, interior permanent magnet rotor, classified in class 310, subclass 156.53.
- Group II, claim(s) Claim 6-14, drawn to metal working, method of mechanical manufacturing (motor), classified in class 29, subclass 596.
- Group III, Claim(s) 26-35, drawn to apparatus, Laser Irradiator, classified in class 372, subclass 1.
- Group IV, Claim(s) 15-25, drawn to metal working, method of metal heating, classified in class 219, subclass 50.

The inventions listed as Groups I, II, III, and IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: (a) Group I has the special technical feature of a rotor which has magnet insertion window and the bridge side being hardened. The method to harden the bridge side is not a special feature in the group I since the process imitation is not given patentable weight in product claim. See MPEP 2113; (b) Group II has the special technical feature of laser peening of irradiating with a laser through a liquid; (c) Group III has the special technical feature of a irradiation device and a drive device; (d) Group IV has the special technical

feature of irradiating with laser on a bridge side of motor window while moving the rotor relative to spot of laser.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-2 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakamura (JP 11018324, see attached English translation).

As for claim 1, Nakamura shows (in Figs. 1-2) and discloses a rotor using an electrical steel sheet with low iron loss, the rotor (10, Fig. 1) [0003] comprising: a bridge side (20) on an inner circumference of a magnet insertion window (16) of said rotor, in which said bridge side is work hardened by a laser peening of irradiating [0021].

Re the process limitation "to which a laser peening of irradiating at an angle relative to the inner circumference of the magnet insertion window with a laser through a liquid has been applied, (in which said bridge side is work hardened) due to a compression residual stress added thereto, said compression residual caused by transmission of a shockwave resulting from a high pressure plasma produced over said bridge side by said laser," product-by-process claims are not limited to the manipulations of the recited step, only the structure implied by the steps. See MPEP 2113. Thus, the process steps were given no patentable weight because claim 1 is product by process limitation.

As for claim 2, Nakamura teaches the claimed invention as applied to claim 1 above. Nakamura further teaches (in Figs. 1-2) and discloses said bridge side (20) irradiated with the laser [0021], and inherently is a region where a high stress occurs due to centrifugal force acting on a magnet when said rotor rotates.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable Nakamura (JP 11018324, see attached English translation) in view of Koharagi et al (US 2003/0057785).

As for claim 3, Nakamura teaches the claimed invention as applied to claim 1 above. Nakamura however is silent to show or disclose a magnet of said rotor for each pole is divided into a plurality of pieces. In the same field of endeavor, Koharagi shows (in Fig. 1) and discloses a magnet (10) of said rotor for each pole (four poles, in this instance) is divided into a plurality of pieces (two per each). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Koharagi with that of Nakamura to enhance system efficiency by effectively utilizing reluctance torque. [0005, 0010]

11. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable Nakamura (JP 11018324, see attached English translation) in view of Edwards et al (US 6848495).

As for claim 4, Nakamura teaches the claimed invention as applied to claim 1 above. Nakamura however is silent to show or disclose said bridge side has a step. In the same field of endeavor, Edwards shows (in Fig. 6) and discloses bridge of rotor slot side (506) has a step. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have bridge side has a step by combining the teaching of Edward with that of Nakamura to form a liquid barrier. (col. 6, line 38-40)

As for claim 5, Nakamura in view of Edwards teaches the claimed invention as applied to claim 4 above. Edwards further shows (in Figs. 6-7) and discloses said step (506) is located on one side or each side.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN K. KIM whose telephone number is (571)270-5072. The fax phone number for the examiner where this application or proceeding is assigned is 571-270-6072. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen Leung can be reached on 571-272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen Leung/
Supervisory Patent Examiner, Art Unit 2834

JK